Claims

What is claimed is:

1. An assembly, comprising:
   a first tubular member comprising external threads;
   a second tubular member comprising internal threads coupled to the external threads of the first tubular member; and
   at least one stress concentrator coupled to at least one of the first and second tubular members adapted to concentrate stresses within the threaded connection between the first tubular member and the second tubular member during a radial expansion of the first and second tubular members.

2. The assembly of claim 1, further comprising:
   an external sleeve surrounding the first and second tubular members.

3. The assembly of claim 1, wherein one or more of the stress concentrators comprise at least one surface of at least one of the first tubular member and the second tubular member.

4. The assembly of claim 1, wherein the stress concentrator is defined axially adjacent to the internal threads of the second tubular member and external threads of the first tubular member.

5. The assembly of claim 1, wherein the stress concentrator is defined radially offset from the internal threads of the second tubular member and external threads of the first tubular member.

6. An assembly, comprising:
   a first tubular member comprising first threads on an external surface of the first tubular member;
   a second tubular member comprising second threads on an internal surface of the second tubular member;
   wherein the first threads are adapted to threadably engage with the second threads; and
   at least one stress concentrator coupled to at least one of the first and second tubular members adapted to concentrate stresses within the threads of the first tubular member and the second tubular member during a radial expansion of the first and second tubular members.

7. The assembly of claim 6, wherein the stress concentrator comprises a groove defined on an exterior surface of the second tubular member.

8. The assembly of claim 7, wherein the groove comprises a helical groove.

9. The assembly of claim 8, wherein the second threads comprise a pitch and a thread count, and the helical groove comprises at least one of a pitch and a thread count substantially similar to the pitch and the thread count of the second threads.

10. The assembly of claim 7, wherein the groove comprises a plurality of radial grooves.

11. The assembly of claim 6, wherein the stress concentrator comprises a plurality of axial grooves.

12. The assembly of claim 6, wherein the stress concentrator comprises a groove on an internal surface of the first tubular member.

13. The assembly of claim 6, further comprising a sleeve exterior to the second tubular member, wherein the stress concentrator comprises at least one of a groove and a notch in a surface of the sleeve.

14. A method comprising:
connecting a first tubular member comprising external threads with a second tubular member comprising internal threads;
providing at least one stress concentrator adapted to concentrate stresses within the interface between the first tubular member and the second tubular member;
positioning the first tubular member and the second tubular member within a borehole that traverses a subterranean formation; and
radially expanding and plastically deforming the first tubular member and the second tubular member within the borehole.

15. A method comprising:
connecting a first tubular member comprising first threads on an external surface with a second tubular member comprising second threads on an internal surface;
providing at least one stress concentrator adapted to concentrate stresses within the threads of the first tubular member and the second tubular member;

positioning the first tubular member and the second tubular member within a borehole that traverses a subterranean formation; and

radially expanding and plastically deforming the first tubular member and the second tubular member within the borehole.

16. An apparatus, comprising:

a wellbore that traverses a subterranean formation; and

a wellbore casing positioned within the wellbore;

the wellbore casing comprising:

a first tubular member comprising external threads;

a second tubular member comprising internal threads coupled to the external threads of the first tubular member; and

at least one stress concentrator adapted to concentrate stresses within the threads of the first tubular member and the second tubular member.

17. An apparatus, comprising:

a wellbore that traverses a subterranean formation; and

a wellbore casing positioned within the wellbore;

wherein the wellbore casing is position within the wellbore by a process comprising:

connecting a first tubular member comprising external threads with a second tubular member comprising internal threads;

providing at least one stress concentrator adapted to concentrate stresses within the threads of the first tubular member and the second tubular member;

positioning the first tubular member and the second tubular member within the wellbore; and

radially expanding and plastically deforming the first tubular member and the second tubular member within the wellbore.

18. An apparatus comprising:

a first tubular member comprising external threads;

a second tubular member comprising internal threads coupled to the external threads of the first tubular member; and

a means to improve a seal between the first tubular member and the second tubular member following a radial expansion and plastic deformation of the first and second tubular members.

19. A method comprising:

providing a first tubular member and a second tubular member;

forming one or more stress concentrators within at least one of the first and the second tubular members adapted to concentrate stresses within the interface between the first tubular member and the second tubular member;

connecting the first tubular member comprising first threads on an external surface with the second tubular member comprising second threads on an internal surface; and

radially expanding and plastically deforming the tubular members.

20. The method of claim 19, wherein the tubular members are threadably coupled; and wherein the stress concentrators are formed adjacent the threaded coupling.

21. The method of claim 19, wherein the stress concentrators comprise surface grooves formed in at least one of the tubular members.

22. A system comprising:

means for connecting a first tubular member with a second tubular member;

means for providing at least one stress concentrator adapted to concentrate stresses within the interface between the first tubular member and the second tubular member;

means for positioning the first tubular member and the second tubular member within a borehole that traverses a subterranean formation; and

means for radially expanding and plastically deforming the first tubular member and the second tubular member within the borehole.

23. A system comprising:

means for connecting a first tubular member with a second tubular member;

means for providing at least one stress concentrator adapted to concentrate stresses within the interface between the first tubular member and the second tubular member;

means for positioning the first tubular member and the second tubular member within a borehole that traverses a subterranean formation; and

means for radially expanding and plastically deforming the first tubular member and the second tubular member within the borehole.

24. A system comprising:

means for providing a first tubular member and a second tubular member;

means for forming one or more stress concentrators within at least one of the first and the second tubular members adapted to concentrate stresses within the interface between the first tubular member and the second tubular member;

means for connecting the first tubular member comprising first threads on an external surface with the second tubular member comprising second threads on an internal surface; and

means radially expanding and plastically deforming the tubular members.

25. The system of claim 24, wherein the tubular members are threadably coupled; and wherein the stress concentrators are formed adjacent the threaded coupling.

26. The system of claim 24, wherein the stress concentrators comprise surface grooves formed in at least one of the tubular members.

27. A method comprising:

providing a first tubular member comprising external threads and a second tubular member comprising internal threads

connecting the external threads of the first tubular member to the internal threads of the second tubular member;

providing at least one stress concentrator adapted to concentrate stresses within the threaded connection of the first tubular member and the second tubular member;

radially expanding and plastically deforming the first tubular member and the second tubular member; and

pressurizing the interiors of the first and second tubular members with a fluidic material;

wherein, during the radial expansion and plastic deformation, the threaded connection prevented the fluidic materials from passing therethrough for operating pressures up to about 4000 psi.

28. A method comprising:

providing a first tubular member and a second tubular member comprising internal threads

coupling the first tubular member to the second tubular member;

providing at least one stress concentrator adapted to concentrate stresses within the coupling between the first tubular member and the second tubular member;

radially expanding and plastically deforming the first tubular member and the second tubular member; and

pressurizing the interiors of the first and second tubular members with a fluidic material;

wherein, during the radial expansion and plastic deformation, the coupling between the first and second tubular members prevented the fluidic materials from passing therethrough for operating pressures up to about 4000 psi.

29. A system comprising:

means for providing a first tubular member comprising external threads and a second tubular member comprising internal threads;

means for connecting the external threads of the first tubular member to the internal threads of the second tubular member;

means for providing at least one stress concentrator adapted to concentrate stresses within the threaded connection of the first tubular member and the second tubular member;

means for radially expanding and plastically deforming the first tubular member and the second tubular member; and

means for pressurizing the interiors of the first and second tubular members with a fluidic material;

wherein, during the radial expansion and plastic deformation, the threaded connection prevented the fluidic materials from passing therethrough for operating pressures up to about 4000 psi.

30. A system comprising:

means for providing a first tubular member and a second tubular member comprising internal threads;

means for coupling the first tubular member to the second tubular member;

means for providing at least one stress concentrator adapted to concentrate stresses within the coupling between the first tubular member and the second tubular member;

means for radially expanding and plastically deforming the first tubular member and the second tubular member; and

means for pressurizing the interiors of the first and second tubular members with a fluidic material;

wherein, during the radial expansion and plastic deformation, the coupling between the first and second tubular members prevented the fluidic materials from

passing therethrough for operating pressures up to about 4000 psi.

31. A method comprising:

providing a first tubular member comprising external threads and a second tubular member comprising internal threads

connecting the external threads of the first tubular member to the internal threads of the second tubular member;

providing at least one stress concentrator adapted to concentrate stresses within the threaded connection of the first tubular member and the second tubular member; and

radially expanding and plastically deforming the first tubular member and the second tubular member;

wherein, during the radial expansion and plastic deformation, the threaded connection prevents fluidic materials from passing therethrough for operating pressures up to about 4000 psi.

32. A method comprising:

providing a first tubular member and a second tubular member comprising internal threads

coupling the first tubular member to the second tubular member;

providing at least one stress concentrator adapted to concentrate stresses within the coupling between the first tubular member and the second tubular member; and

radially expanding and plastically deforming the first tubular member and the second tubular member;

wherein, during the radial expansion and plastic deformation, the coupling between the first and second tubular members prevents fluidic materials from passing therethrough for operating pressures up to about 4000 psi.

33. A system comprising:

means for providing a first tubular member comprising external threads and a second tubular member comprising internal threads

means for connecting the external threads of the first tubular member to the internal threads of the second tubular member;

means for providing at least one stress concentrator adapted to concentrate stresses within the threaded connection of the first tubular member and the second tubular member; and

means for radially expanding and plastically deforming the first tubular member and the second tubular member; and

wherein, during the radial expansion and plastic deformation, the threaded connection prevents fluidic materials from passing therethrough for operating pressures up to about 4000 psi.

34. A system comprising:

means for providing a first tubular member and a second tubular member comprising internal threads

means for coupling the first tubular member to the second tubular member;

means for providing at least one stress concentrator adapted to concentrate stresses within the coupling between the first tubular member and the second tubular member; and

means for radially expanding and plastically deforming the first tubular member and the second tubular member;

wherein, during the radial expansion and plastic deformation, the coupling between the first and second tubular members prevents fluidic materials from passing therethrough for operating pressures up to about 4000 psi.

35. An assembly, comprising:

a first tubular member comprising external threads;

a second tubular member comprising internal threads coupled to the external threads of the first tubular member; and

at least one stress concentrator coupled to at least one of the first and second tubular members adapted to concentrate stresses within the threaded connection between the first tubular member and the second tubular member during a radial expansion of the first and second tubular members such that the threaded connection prevents fluidic materials from passing therethrough for operating pressures up to about 4000 psi.

36. An assembly, comprising:

a first tubular member;

a second tubular member coupled to the first tubular member; and

at least one stress concentrator coupled to at least one of the first and second tubular members adapted to concentrate stresses within the interface between the first tubular member and the second tubular member during a radial expansion of the first and second tubular members such that the coupling

prevents fluidic materials from passing therethrough for operating pressures up to about 4000 psi.

37. A method comprising:

providing a first tubular member comprising external threads and a second tubular member comprising internal threads;

connecting the external threads of the first tubular member to the internal threads of the second tubular member; and

radially expanding and plastically deforming the first tubular member and the second tubular member;

wherein, during the radial expansion and plastic deformation, the threaded connection prevents fluidic materials from passing therethrough for operating pressures up to about 4000 psi.

38. A method comprising:

providing a first tubular member and a second tubular member comprising internal threads;

coupling the first tubular member to the second tubular member; and

radially expanding and plastically deforming the first tubular member and the second tubular member;

wherein, during the radial expansion and plastic deformation, the coupling between the first and second tubular members prevents fluidic materials from passing therethrough for operating pressures up to about 4000 psi.

39. A system comprising:

means for providing a first tubular member comprising external threads and a second tubular member comprising internal threads;

means for connecting the external threads of the first tubular member to the internal threads of the second tubular member; and

means for radially expanding and plastically deforming the first tubular member and the second tubular member;

wherein, during the radial expansion and plastic deformation, the threaded connection prevents fluidic materials from passing therethrough for operating pressures up to about 4000 psi.

40. A system comprising:

means for providing a first tubular member and a second tubular member comprising

internal threads;

means for coupling the first tubular member to the second tubular member; and

means for radially expanding and plastically deforming the first tubular member and the second tubular member;

wherein, during the radial expansion and plastic deformation, the coupling between the first and second tubular members prevents fluidic materials from passing therethrough for operating pressures up to about 4000 psi.

41. An assembly, comprising:

a first tubular member comprising external threads; and

a second tubular member comprising internal threads coupled to the external threads of the first tubular member;

wherein, during a radial expansion and plastic deformation of the first and second tubular members, the threaded connection prevents fluidic materials from passing therethrough for operating pressures up to about 4000 psi.

42. An assembly, comprising:

a first tubular member; and

a second tubular member coupled to the first tubular member;

wherein, during a radial expansion and plastic deformation of the first and second tubular members, the coupling prevents fluidic materials from passing therethrough for operating pressures up to about 4000 psi.